The Amateur in You, Part 2

What have you been pondering?

Setting up Winlink for an Icom IC-7300

One way to take advantage of a digital radio mode is by using *Winlink*, software that allows you to send and receive emails over HF. The Winlink system stores email, attachments, messages, weather bulletins, and more on clustered servers, the delivers them by internet when the web is available, or by the *Winlink Hybrid Network* when the web is unavailable. This makes email and messaging available at all times, as long as HF propagation is favorable for your band of choice.

Using Winlink with an Icom IC-7300 is fairly straightforward because of its built-in TNC / sound card. In fact, there are many modern transceivers with this built-in device, so it's not unreasonable to expect that you too might have one of them.

One caveat I need to state is that, although the links I've provided are valid at the time of this writing, some of them point to retail locations that could change without much notice. Hopefully, I've described enough detail to help you find the parts or the information without their links. And speaking of details, this little guide will not explain *every detail* about Winlink installation and use.

Gather the pieces

You'll need to collect a few things, to set up your Winlink station, starting with a computer running Windows 7 or later. In this example, I'm using my HP ProBook laptop running 64-bit Microsoft Windows 10 Pro with 12 GB of memory. I only provide this so you'll know what I'm using.

Next, you'll need an amateur station made from an Icom IC-7300 transceiver, plus an accompanying power supply, HF antenna, and coaxial cable. The tuner is built into the transceiver, so no need to get another.

Finally, you'll need to purchase a high-quality USB type A/B cable. An unshielded or otherwise cheaply made USB cable can result in your receiver signals mixing with harmonics, affectionately known as *birdies*.
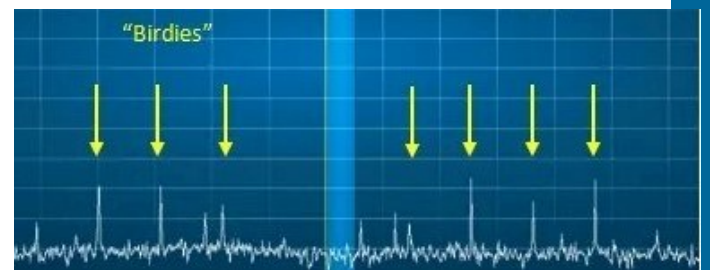
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Pair your computer with the transceiver

First, make sure your USB cable is recognized by both your computer and the IC-7300. Turn on the IC-7300 and plug the USB type B end of the cable into the rear of the IC-7300. Next, turn
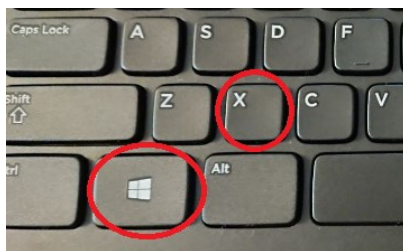
USB type B plug

*USB port (socket) in the rear of the IC-7300*

on your computer, and once Windows is fully up and running, plug the other end of the cable into your computer USB port. Press <Windows-x> on your keyboard. (While holding the Windows key, press x)

Click Device Manager. In the Device Manager window, click the little greater-than sign (>) in front of "Ports (COM & LPT)" to display the COM port numbers. The IC-7300 should appear under the Ports list as "Silicon Labs CP210x USB to UART Bridge" or similar. If you see this line, but not in the Ports (COM & LPT) list, you'll need to install the Icom IC-7300 USB driver, which you can download from the Icom website.

Record (write down or remember) the COM port number listed after the driver name. In my case it's COM8.
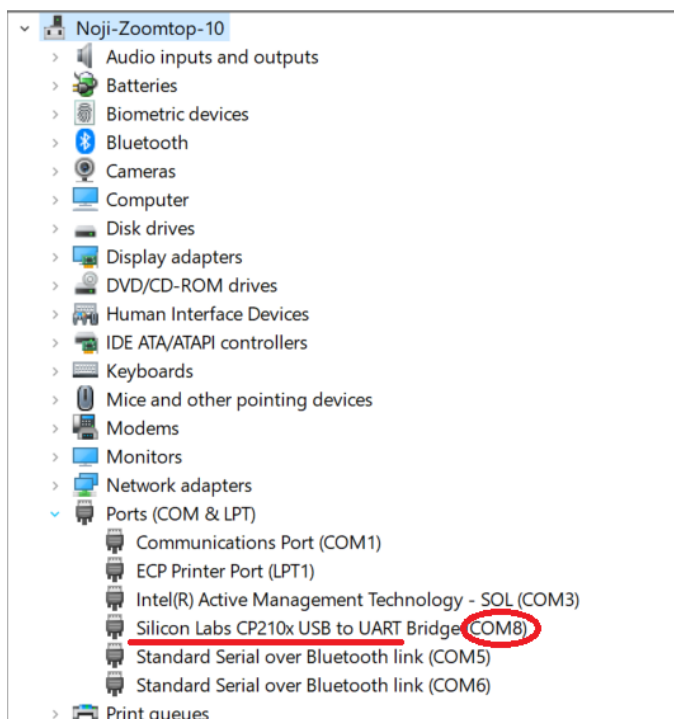
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Set up the transceiver

Ensure an antenna is connected to the rear of the IC-7300 by a feed line (coaxial cable). On the IC-7300 press the **MENU** button, then tap **SET**, then **Connectors**. Leave most of the settings at their defaults, which should be

- **ACC/USB Output Select = AF**
- **ACC/USB Output Level = 50%**
- **ACC/USB AF SQL = OFF (Open)**
- **ACC/USB AF Beep/Speech**… **Output = OFF**
- **ACC/USB IF Output Level = 50%**
- **ACC MOD Level = 50%**
- **USB MOD Level = 40%**
- **USB Serial Function = CI-V**
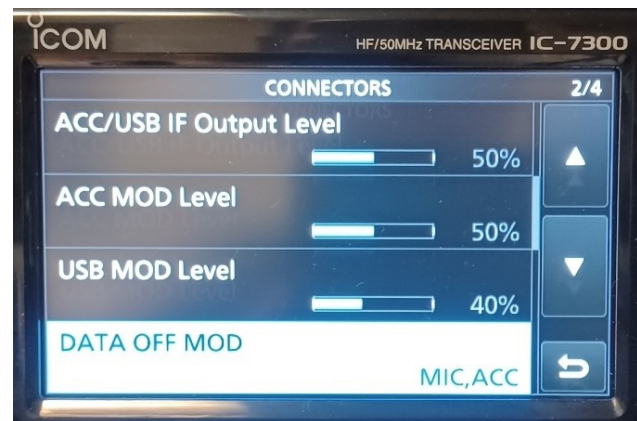
Tap **DATA OFF MOD** and select **MIC,ACC**

Scroll down and tap **DATA MOD**, then select **USB**

Tap **CI-V** and ensure the following settings show

- **CI-V Baud Rate = Auto**
- **CI-V Address = 94h**
- **CI-V Transceive = ON**
- **CI-V USB->Remote Transceive Address = 00h**
- **CI-V Output (for ANT) = OFF**
- **CI-V USB Port = Unlink from [REMOTE]**
- **CI-V USB Baud Rate = 115200**
- **CI-V USB Echo Back = ON**
- **Inhibit Timer at USB Connection = ON**

Tap the **Return** icon to return to the **SET** window, then tap **Function** and ensure the following are set:

- **RF/SQL Control = RF+SQL**
- **Tuner**, then **PTT Start = ON**

Return icon

This last setting will automatically tune (and leave the tuner on) when the software starts transmitting. Here are a couple more general settings:

- Ensure the **COMP** (compression) is turned **OFF**
- Set the **RF POWER** to **100%** and the **MIC GAIN** to **30%**

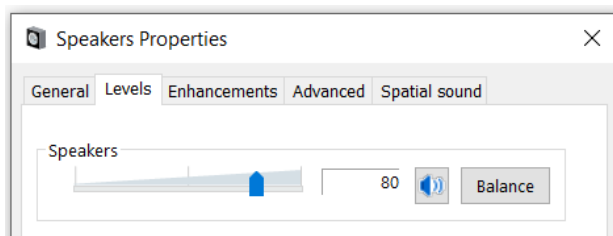# The Amateur in You, Part 2

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Set up your computer sound devices

You'll be sending and receiving messages through the built-in TNC of the IC-7300, and communicating with it through your computer's sound interface. This means setting your microphone and speaker that are attached to the transceiver to appropriate levels. On your computer, open the *Control Panel*, click **Sound**, then click the **Recording** tab. Select the microphone associated with *USB Audio CODEC*, then click **Properties**. Click the **Levels** tab and ensure the slider is about **28**, then click **OK** to exit.
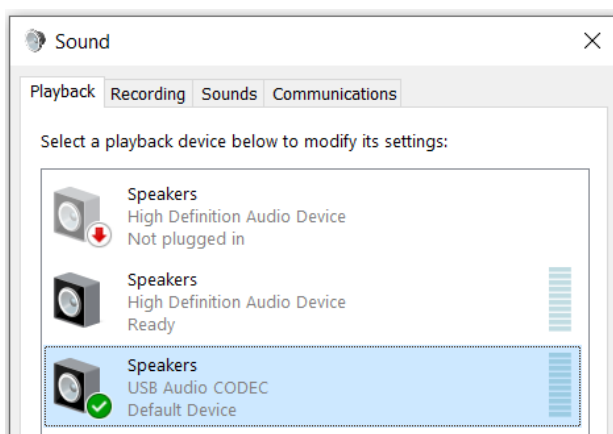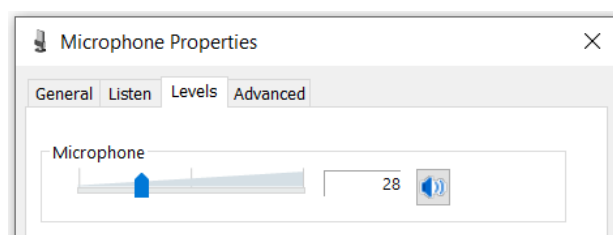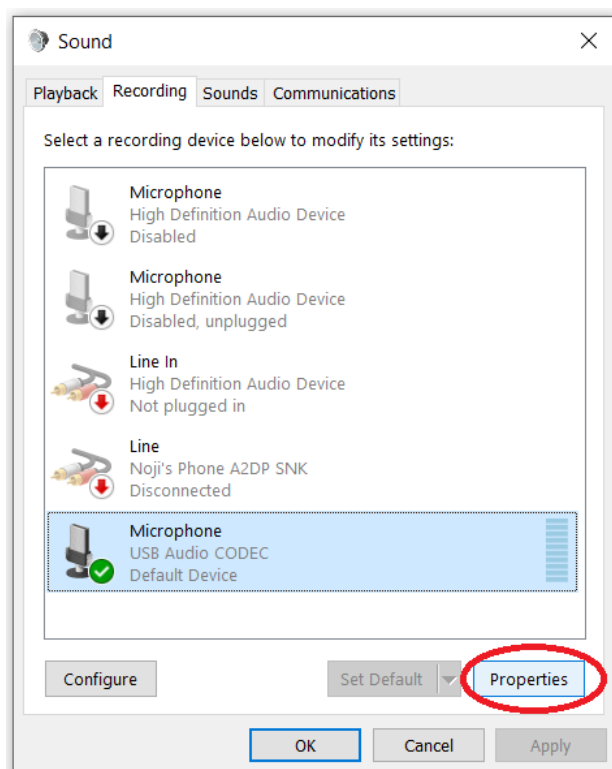
Back on the **Sound** window, click the **Playback** tab and select the speaker associated with *USB Audio CODEC*, then click **Properties**. Click the Levels tab and ensure the slider is about **80**, then click **OK** to exit.

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Set up the software

Download and install Winlink Express from the Winlink website (click *User Programs*, then *Winlink Express*, scroll down, then click the link under Download) onto your computer. Here is the online manual if you need to refer to it.

Open the Winlink Express software and click **Settings**, then **Winlink Express Setup…** Enter the following settings:

- **My Callsign: KNØJI** (your call sign)
- **My Password:** (your choice)
- Enter your information in **Name:**, **City:**, **State:**, **Country:**, and **Non-Winlink e-mail:**
- Enter a password recovery email
- **Phone number:** (your cell)

Enter your Grid square in **My Grid Square:** if you know it, and leave the remaining settings at default, or modify them later, as you become familiar with the software.

Click the **Update** button to save your settings and return to the main (startup) window.
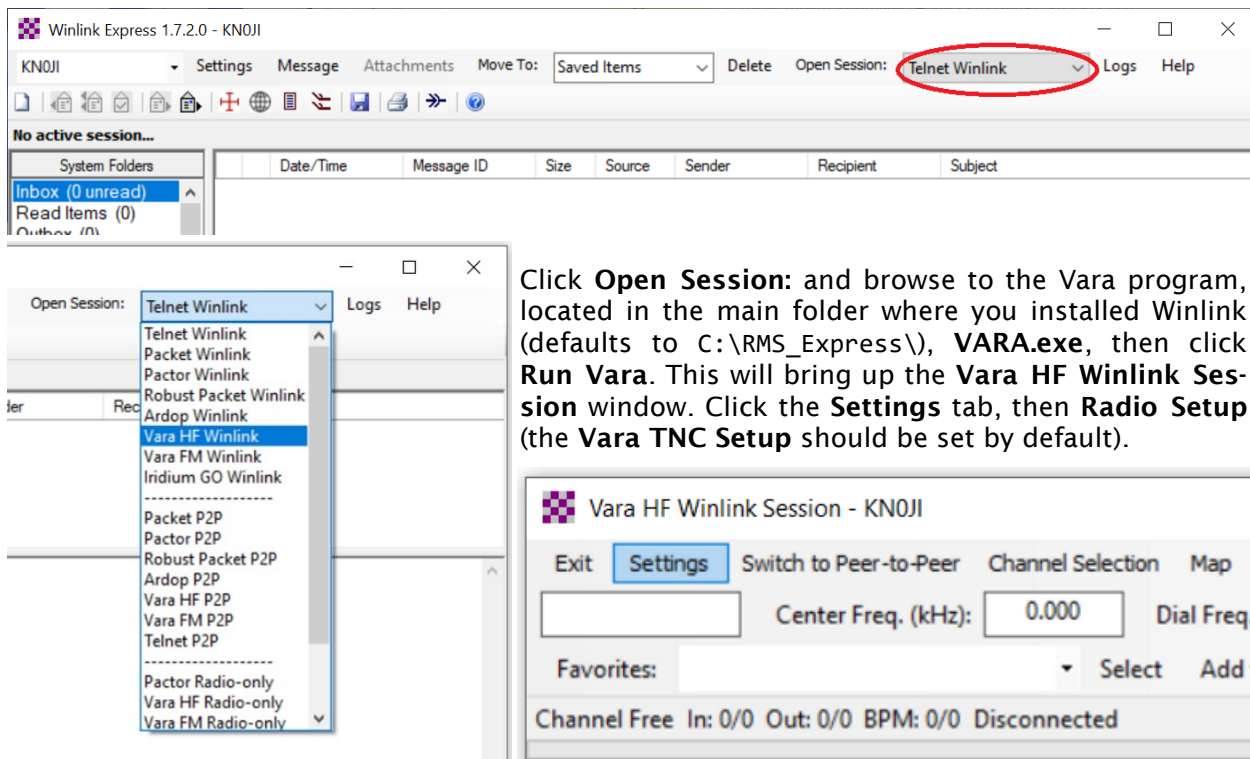
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Start up the software

On the main Winlink screen, click the **Telnet Winlink** dropdown and select **Vara HF Winlink**.

Click **Open Session:** and browse to the Vara program, located in the main folder where you installed Winlink (defaults to `C:\RMS_Express\`), **VARA.exe**, then click **Run Vara**. This will bring up the **Vara HF Winlink Session** window. Click the **Settings** tab, then **Radio Setup** (the **Vara TNC Setup** should be set by default).
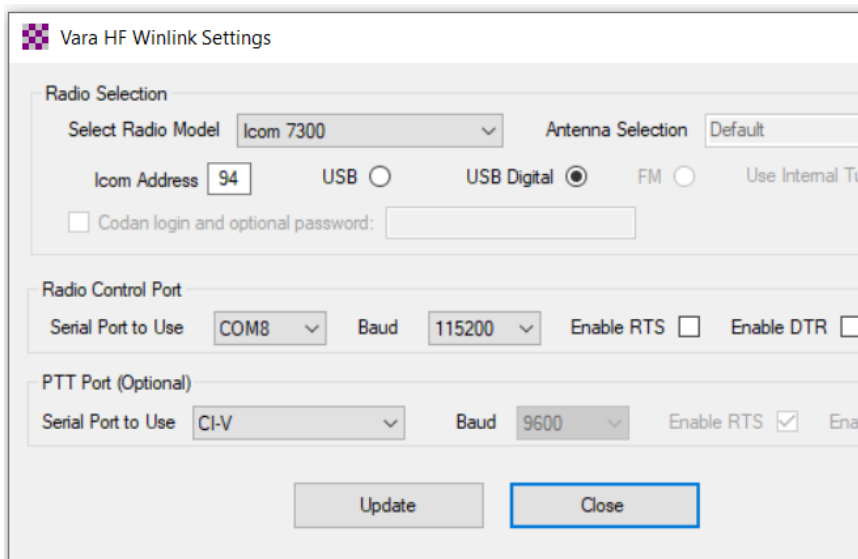
Click **Select Radio Model** and select **Icom 7300**. For **Icom Address** enter **94** and select **USB Digital**.

Under the **Radio Control Port** section, for **Serial Port to Use** select the **COM** port discovered earlier, change the **Baud** to **115200**, and un-check the **Enable RTS** and **Enable DTR** boxes. Under the **PTT Port (Optional)** section, change **Serial Port to Use** to **CI-V** and leave the **Baud** setting at default. Click **Update** to save your settings and continue.

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Compose and send

In the Winlink main window click the **Message** tab, then **New Message**. Compose an email like you normally would, then click **Post to Outbox**.

In the Winlink main window click the **Open Session:** tab, then click **Channel Selection** to choose an HF server by which to send the email. Click **Update Via Internet** to populate the chart with a list of available HF servers. Click an entry to select your HF server of choice, then click **Select** to have Winlink populate the Session window with your server selection.

Click **Start** in the upper-right of the Session window, and Winlink will begin calling out to the target server with your call sign, several times until it verifies a connection or exhausts its retries. Making a successful connection might require you to try going through any of several HF servers. They're listed by path integrity, and might not reflect that from your particular location. Double-click your line of choice to start.

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Success
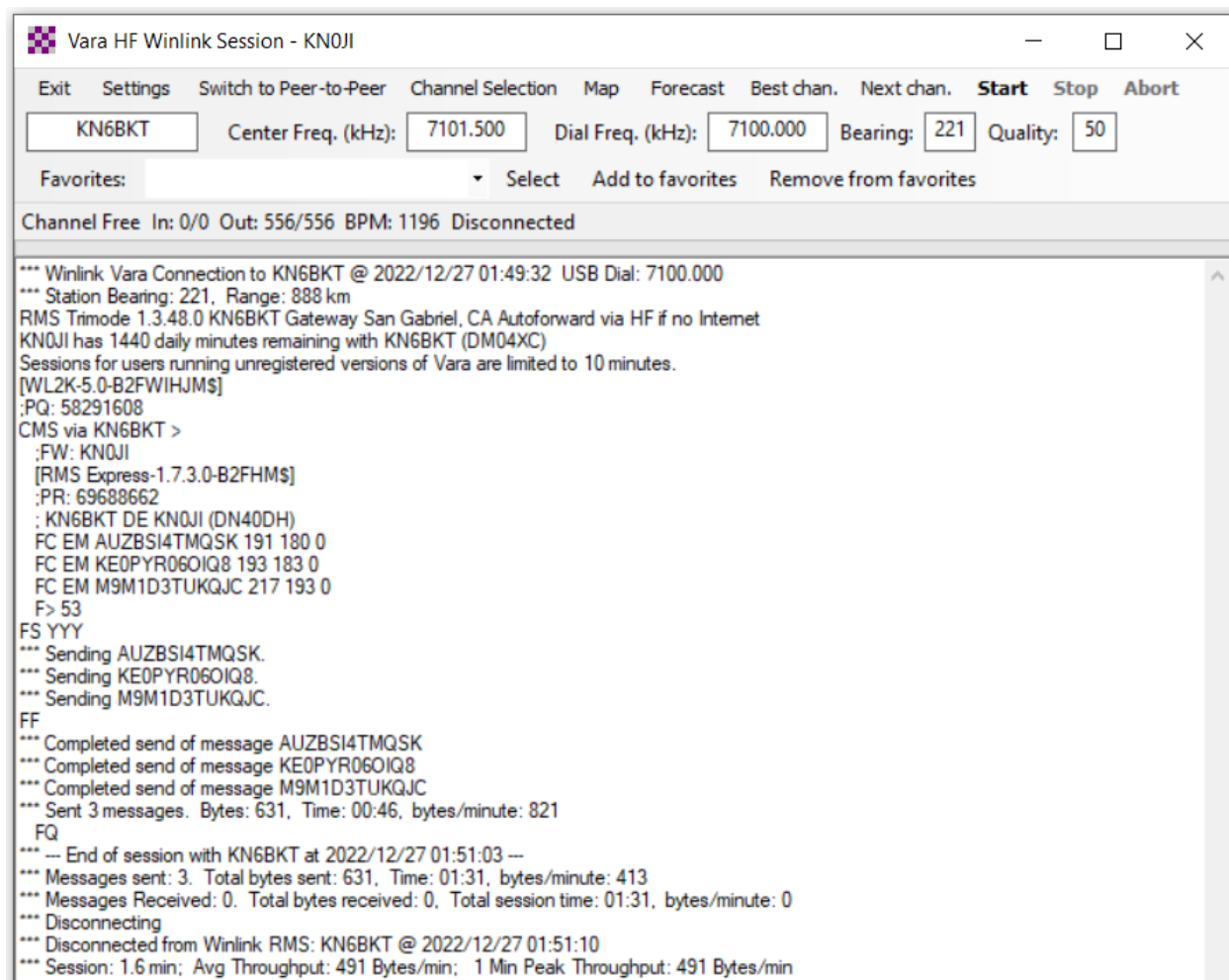
As you can see, I had three messages waiting in my Outbox, now all sent. And to the right is my last message as was received by UVARC.

By the way, I started out attempting to use ARDOP, but could never get it to work, because most HF servers don't support it yet. As soon as I went to Vara, it worked almost effortlessly.

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